

WHAT IS CLAIMED IS:

1. A fuel cell system comprising:

a reservoir for cryogenic media for providing a fuel;

a fuel cell unit containing at least one fuel cell connected to receive fuel from the reservoir;

a cooling circuit for cooling the fuel cell unit;
and

a heating circuit including at least one first heat exchanger for heating cryogenic medium provided from said reservoir to said fuel cell unit, said heating circuit being coupled directly to the cooling circuit for the fuel cell unit.

2. The fuel cell system in accordance with Claim 1, wherein a cooling device is provided within the heating circuit of the reservoir, for cooling the power electronics of the fuel cell system.

3. The fuel cell system in accordance with Claim 1, wherein a condenser is provided within the heating circuit of the reservoir, for condensing a medium of the fuel cell system.

4. The fuel cell system in accordance with Claim 1, wherein the cooling circuit of the fuel cell unit includes a second heat exchanger, in the form of one of a radiant heat exchanger and a convection heat exchanger.

5. The fuel cell system in accordance with Claim 1, wherein a plate-type heat exchanger is provided as the first heat exchanger.

6. The fuel cell system in accordance with Claim 1, wherein the cryogenic medium is liquid hydrogen.

7. The fuel cell system in accordance with Claim 1, wherein the fuel cell unit comprises at least one PEM fuel cell.

8. A method for generating gaseous fuel from a cryogenic medium in a fuel cell system which includes a reservoir for storing said cryogenic medium, a fuel cell unit coupled to receive said gaseous fuel, and a cooling circuit for circulating a cooling medium for cooling said fuel cell unit, said method comprising:

transferring heat from said cooling medium to said cryogenic medium by means of a heat exchanger connected between said reservoir and said fuel cell unit, by causing cooling medium from said cooling circuit to flow through said heat exchanger.